

What is claimed is

1. A method for rendering a color image on a display apparatus in which a pixel expressing an input image is formed with delta-structured sub-pixels, the method comprising:

5 (a) forming a scaling filter which is used to make the resolution of the input image correspond to the resolution of the display apparatus;

(b) obtaining a representative value of a sub-pixel of the display apparatus corresponding to a consideration area which is an area processed by the scaling filter in the input image; and

10 (c) rendering the filtered sub-pixel value on the display apparatus.

2. The method of claim 1, wherein the step (a) comprises:

(a1) calculating the ratio of resolutions between the input image and the display apparatus;

15 (a2) determining the number of masks of a scaling filter, based on the cycle of alternation in the horizontal direction and in the vertical direction between the pixel of the input image calculated by using the resolution ratio obtained in the step (a1) and the sub-pixel of the display apparatus having a delta structure; and

20 (a3) taking centroids of sub-pixels corresponding to respective masks as the centers of the masks, and determining the coefficients of the masks in proportion to the size of the masks.

3. The method of claim 2, wherein in the masks of the step (a3)  
25 the shape depends on sub-pixel structuring.

4. The method of claim 1, wherein in the step (b) the representative value of the sub-pixel is obtained by giving a weighted value  
30 based on the distance to the central location of the sub-pixel of the display apparatus, to the values of the pixels of the input image in the consideration area.

5. A method for rendering a color image on a display apparatus in which a pixel expressing an input image is formed with delta-structured sub-pixels, the more complex method comprising:

(a) forming a scaling filter which is used to make the resolution of the input image correspond to the resolution of the display apparatus;

(b) obtaining a representative value of a sub-pixel of the display apparatus corresponding to a consideration area which is an area processed by the scaling filter in the input image;

(c) obtaining the value of the sub-pixel based on the difference of pixels in the consideration area in the input image;

(d) performing gamma correction of the sub-pixel value so that the sub-pixel is appropriate to the display apparatus; and

(e) rendering the gamma-adjusted sub-pixel value on the display apparatus.

6. The method of claim 5, wherein in the step (c) the value of the output sub-pixel is rendered by considering the product of coefficients of a scaling filter which corresponds to input pixels corresponding to the location of the sub-pixel and the difference between the representative value of the output sub-pixel obtained in the step (b) and neighboring input pixels in a corresponding area.

7. The method of claim 5, wherein in the step (d) the value of the output sub-pixel is corrected based on the gamma value of individual components.

8. An apparatus for rendering a color image on a display apparatus in which a pixel expressing an input image is formed with delta-structured sub-pixels, the apparatus comprising:

a scaling filter forming unit which forms a scaling filter which is used to make the resolution of the input image correspond to the resolution of the display apparatus;

a sub-pixel representative value extracting unit which obtains a representative value of a sub-pixel of the display apparatus corresponding to a consideration area which is an area processed by the scaling filter in the input image;

5 a sub-pixel value adjusting unit which obtains the value of the sub-pixel based on the difference of pixels in the consideration area in the input image;

a gamma correction unit which performs correction of the sub-pixel value so that the sub-pixel is appropriate to the display apparatus; and

10 a rendering unit which renders the gamma-adjusted sub-pixel value on the display apparatus.

9. A computer readable medium having embodied thereon a computer program for the method of claim 1.

15 10. A computer readable medium having embodied thereon a computer program for the method of claim 2.

11. A computer readable medium having embodied thereon a computer program for the method of claim 3.

20 12. A computer readable medium having embodied thereon a computer program for the method of claim 4.

13. A computer readable medium having embodied thereon a computer program for the method of claim 5.

14. A computer readable medium having embodied thereon a computer program for the method of claim 6.

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